



## Santa Clara High Technology Law Journal

---

Volume 20 | Issue 2

Article 3

---

January 2004

# Electronic Contracting Under the 2003 Revisions to Article 2 of the Uniform Commercial Code: Clarification or Chaos?

Juanda Daniel

Follow this and additional works at: <http://digitalcommons.law.scu.edu/chtlj>



Part of the [Law Commons](#)

---

### Recommended Citation

Juanda Daniel, *Electronic Contracting Under the 2003 Revisions to Article 2 of the Uniform Commercial Code: Clarification or Chaos?*, 20 SANTA CLARA HIGH TECH. L.J. 319 (2004).

Available at: <http://digitalcommons.law.scu.edu/chtlj/vol20/iss2/3>

This Article is brought to you for free and open access by the Journals at Santa Clara Law Digital Commons. It has been accepted for inclusion in Santa Clara High Technology Law Journal by an authorized administrator of Santa Clara Law Digital Commons. For more information, please contact [sculawlibrarian@gmail.com](mailto:sculawlibrarian@gmail.com).

# **ELECTRONIC CONTRACTING UNDER THE 2003 REVISIONS TO ARTICLE 2 OF THE UNIFORM COMMERCIAL CODE:**

## **CLARIFICATION OR CHAOS?**

**Juanda Lowder Daniel†**

### **I. SYNOPSIS**

In May 2003, Article 2 of the Uniform Commercial Code was revised to facilitate electronic contracting for the sale of goods. It now allows a contract to be formed by the interaction of two pre-programmed computers, even though no individual was aware of it. This article will examine apparent anomalies created by combining the new electronic contracting provisions with the surviving provisions of Article 2 and emphasize the need to provide contracting parties with the opportunity for human intervention before the contract is formed. After introducing the new provisions and the potential problems it creates, the article proceeds to analyze whether allowing contracting between computers comports with the long-standing notion of contractual intent. In addition, the new provisions are analyzed under Article 2's provisions relating to parol evidence, output and requirements contracts, and waivers and modifications. The focus then turns to whether the current common law doctrines of fraud and mistake afford any relief from contracts formed between preprogrammed computers. Lastly, the conclusion offers remedial measures in order to avoid the seemingly unintentional effects predicted by this article.

---

† B.A., California State University, Dominguez Hills; J.D., Emory University; Assistant Professor of Law, University of La Verne College of Law, Ontario, California. I wish to thank H. Randall Rubin, Charles Daskow and John Linarelli for their helpful comments on earlier drafts of this article. All mistakes are mine.

## TABLE OF CONTENTS

I. Synopsis .....	319
II. Introduction .....	321
III. Legal Framework For Electronic Contracting.....	323
IV. Common Law Requirement Of Objective Manifestation Of Contractual Intent.....	325
V. Electronic Agents And The Parol Evidence Rule .....	331
A. The Framework of the Parol Evidence Rule. ....	331
B. The Parol Evidence Rule Meets the Electronic Agents.....	332
VI. Electronic Agents And Output/Requirements Contracts.....	334
VII. Electronic Agents And Waivers/Modifications .....	336
VIII. Electronic Agents And Avoidance Doctrines .....	339
A. Fraud .....	340
B. Mistake.....	341
C. Guidelines for Tailoring Avoidance Doctrines to Electronic Transactions. ....	344
IX. Conclusion .....	344

## II. INTRODUCTION

*"It was the best of times,  
it was the worst of times . . ."*<sup>1</sup>

At last, the Uniform Commercial Code ("U.C.C."), Article 2,<sup>2</sup> has been revised in order to recognize electronic contract formation for the sale of goods.<sup>3</sup> Unfortunately, in doing so, the drafters simultaneously created a situation wherein parties utilizing the new electronic contracting provisions may find themselves bound by contracts they did not know about and/or subject to contractual terms which they did not have any ability to review or approve. Moreover, such parties may find themselves unable to extract themselves from such contractual relationships under current contract law. Accordingly, the new electronic contracting provisions tend to leave one wondering whether the long-awaited revisions to Article 2 created more problems than they solved.

Until the most recent amendments, courts frequently were called upon to determine whether electronic transmissions were "writings"<sup>4</sup> within the ambit of Article 2. How was one to satisfy the Statute of Frauds'<sup>5</sup> previous requirement of a sufficient writing where the parties only corresponded electronically? Was the battle of the forms<sup>6</sup> rendered inapplicable to mutual agreements consummated by computer transmission not evidenced by a writing sent within the definition of U.C.C. section 1-201(36)?<sup>7</sup> Despite the plain language of the relevant code sections, the U.C.C. was frequently stretched, twisted and sometimes ignored as judges attempted to bridge the

1. CHARLES DICKENS, A TALE OF TWO CITIES 1 (Oxford Illustrated Dickens ed., Oxford University Press 1998) (1859).

2. Formally entitled Uniform Commercial Code – Sales, Article 2 governs transactions involving the sale of goods. U.C.C. §§ 2-101, 2-102 (1968).

3. Specifically, U.C.C. § 2-204 was revised to include language authorizing the formation of a contract for the sale of goods by the interaction of electronic agents, as well as the interaction of an electronic agent and an individual. U.C.C. § 2-204 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

4. The term writing refers to "printing, typewriting, or any other intentional reduction to tangible form." U.C.C. § 1-201(43) (2002).

5. U.C.C. § 2-201 (1996).

6. *Id.* § 2-207. This code section governed whether the parties' non-matching writings created a contract.

7. U.C.C. § 1-201(36) (2001) provides that a writing is sent when it is deposited in the mail or delivered for transmission by a usual means of communication. Moreover, former § 2-207 referred to "a definite and seasonable expression of acceptance 'sent' . . . ." U.C.C. § 2-207 (1996).

technology gap between 1951<sup>8</sup> and the modern era in which the use of computers and similar electronic transmitting implements have become commonplace in commercial dealings. The decisions rendered under the referenced code sections, as adopted by the respective states, are as varied on these issues as the men and women who don the black robes in an attempt to make sense of such matters.

For example, the consensus had been to assume that an email transmission met the definition of "a writing" under the U.C.C. for the purpose of satisfying the Statute of Frauds and to focus on whether the email sufficiently points to the existence of an agreement between the parties.<sup>9</sup> However, in at least one pre-revision case, the court determined that use of the term "send" implied a requirement to deliver a written document.<sup>10</sup>

Even in its pre-revision state, Article 2 was on the cutting-edge of contract formation by dispensing with the need for certainty in many of the contractual terms. For example, the absence of a specified price or delivery date did not prevent the formation of a valid and enforceable contract. Instead, Article 2 contained "gap filler" provisions that supplied the missing terms in order to facilitate the transaction of business.<sup>11</sup> Those cutting-edge provisions are retained by the 2003 official version of the U.C.C.

However, on May 13, 2003, the American Law Institute approved amendments to Article 2 that not only substituted the term "record"<sup>12</sup> where a writing was previously required,<sup>13</sup> but also allows contract formation between two electronic agents<sup>14</sup> without the knowledge or action of an individual.<sup>15</sup> Thus, parties can bind

8. The first official version of U.C.C. Article 2 was promulgated in 1951. See *Work Concludes on Revision of Uniform Commercial Code Articles 2 and 2A*, at <http://www.nccusl.org> (May 14, 2003).

9. See generally John E. Theuman, Annotation, *Satisfaction of the Statute of Frauds by E-mail*, 110 A.L.R. 5th 277 (2003).

10. *Mut. Sav. & Loan v. Nat'l Bank of Detroit*, 462 N.W.2d 797, 799 (Mich. Ct. App. 1990) (decided under U.C.C. Articles 3 and 4 but necessarily construing the definition of "sent" in the general provisions of Article 1).

11. E.g., U.C.C. § 2-305 (1996).

12. This term is defined as information inscribed in a tangible medium or in electronic form that is retrievable and in perceivable form. U.C.C. § 2-103(1)(m) (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

13. *Id.*

14. An electronic agent is defined as "a computer program or an electronic or other automated means used independently to initiate an action or respond to electronic records or performances in whole or in part, without review or action by an individual." *Id.* § 2-103(1)(g).

15. *Id.* § 2-204(4)(a). It should be noted that this code section also allows formation of a contract by interaction between an electronic agent and an individual. However, the effect of

themselves to a contract without the opportunity to learn or approve of the final terms. While the advantages of electronic contracting are plentiful, the drafters may have gone too far by putting too much faith in automation. The risks associated with engaging in electronic contracting may actually deter people from utilizing this new convenience.

This article examines apparent anomalies created by combining the new electronic contracting provisions with the surviving provisions of Article 2, and emphasizes the need to provide contracting parties with the opportunity for human intervention before the contract is formed. Section II addresses the basics of electronic contracting, as well as the source of the provisions included in revised Article 2. Section III explores how contracting through electronic agents impinges on the long-standing general notions of contractual intent. Section IV examines how the new electronic formation provisions appear to render the parol evidence rule inapplicable in such situations. In Section V, provisions for output and requirements contracts are analyzed in light of the new revisions removing the requirement of individual input from the contract formation process. In Section VI, the applicability of the waiver and modification provisions to a contract created by electronic agents is questioned. Section VII focuses on whether certain avoidance doctrines can provide relief to a party who relies on electronic agents in the contracting process. Lastly, the conclusion offers remedial measures in order to avoid the seemingly unintentional effects predicted by this article.

### III. LEGAL FRAMEWORK FOR ELECTRONIC CONTRACTING

Electronic contracting is the process whereby offers and acceptances are transmitted electronically between the parties.<sup>16</sup> Article 2 defines the term “electronic” as relating to technology utilizing “electrical, digital, magnetic, wireless, optical,

---

this provision is not examined in this article. *See generally Amendments to Uniform Commercial Code Article 2—Sales*, as approved at the Annual Meeting of the American Law Institute on May 13, 2003, at <http://www.ali.org/>. The National Conference of Commissioners on Uniform State Laws previously approved the identical amendments in August 2002. *See Uniform Law Commissioners, Work Concludes on Revision of Uniform Commercial Code Articles 2 and 2A*, at

<http://www.nccusl.org/nccusl/DesktopModules/NewsDisplay.aspx?ItemID=52> (May 14, 2003).

16. *See, e.g.*, Tom Allen & Robin Widdison, *Can Computers Make Contracts?*, 9 HARV. J.L. & TECH 25, 28–29 (1996).

electromagnetic, or similar capabilities.”<sup>17</sup> Electronic transmission occurs through a process which breaks the data into a series of smaller pieces, sends the information over the Internet wherein it travels over a number of interim computers along the way, and reassembles the data when it reaches its destination.<sup>18</sup> In light of the process in which the electronic data is disassembled upon dispatch and then reassembled upon arrival at its destination, the potential for transmission error exists.<sup>19</sup>

In 1999, the Uniform Electronic Transaction Act (UETA) was promulgated to validate electronic records and signatures in electronic commerce.<sup>20</sup> A review of the 2003 revisions to Article 2 pertaining to electronic contracting reveals that many of the definitions and terms were borrowed from the UETA.<sup>21</sup> Paradoxically, the UETA specifically points to the provisions of Article 2 and other long standing common law principles to determine whether an agreement exists.<sup>22</sup> Moreover, the UETA makes it clear that it was never intended to provide substantive rules of contracting or to affect such rules.<sup>23</sup> This may explain why the inclusion of electronic contracting provisions into the formation provisions of Article 2 appear to create chaos.

Even though revised Article 2 was inspired by the UETA with regard to inclusion of electronic contracting provisions, there are notable differences between the two acts. First, the UETA specifically requires that a party assent to conduct a transaction electronically in order for the UETA to apply,<sup>24</sup> while Article 2 does not. Also, the UETA provides the non-waivable right of a party to refuse to conduct future transactions electronically.<sup>25</sup> Article 2 does not specifically provide for the ability to refuse to contract

17. U.C.C. § 2-103(1)(f) (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

18. See, e.g., Paul Fasciano, Note, *Internet Electronic Mail: A Last Bastion for the Mailbox Rule*, 25 HOFSTRA L. REV. 971, 1000 (1997).

19. See Helen H. Richardson, *Ecommerce—Does It Make An E-Difference?*, in INTELLECTUAL PROPERTY LICENSING IN TODAY’S “E-ECONOMY”, A.L.I. - A.B.A. COURSE OF STUDY, 55, 82 (May 30–31, 2002).

20. Uniform Electronic Transactions Act, prefatory note (1999).

21. See also U.C.C. § 2-204 cmt. 4 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

22. Uniform Electronic Transactions Act § 2(1) & cmt. 1 (1999).

23. “It is NOT a general contracting statute—the substantive rules of contracts remain unaffected by UETA.” Uniform Electronic Transactions Act, prefatory note (1999).

24. *Id.* § 5(b).

25. *Id.* § 5(c).

electronically. In fact, Article 2 specifically validates any action performed by an electronic agent by attributing such action to the parties.<sup>26</sup> However, the correlating UETA provision regarding attribution of an electronic record to a party does not specifically mention acts of an electronic agent.<sup>27</sup> Moreover, while the UETA acknowledges and attempts to deal with the possibility of change or error occurring in an electronic transmission,<sup>28</sup> Article 2 contains no parallel provision. From all indications, the UETA was depending on the continued existence of the then-existing Article 2 provisions, which included the common law notions of contractual intent, in order to complement the UETA. Also, it is important to note not every state has adopted the UETA.<sup>29</sup>

The electronic contracting provisions of the UETA and the newly revised Article 2 appear to contemplate situations where the parties will program their respective computers to initiate and/or respond to electronic orders within certain predetermined parameters. The problem is the majority of Article 2 provisions that survived the 2003 revisions continue to operate in a world that at least ostensibly requires human intervention at some point during the contract formation stage to have an enforceable agreement. The fact that the revised Article 2 neither requires that a party assent beforehand to contract through electronic agents nor requires that the parties be afforded an opportunity to review the actions of an electronic agent during the contract formation stage may prove to be an insurmountable hindrance to e-commerce transactions.

#### IV. COMMON LAW REQUIREMENT OF OBJECTIVE MANIFESTATION OF CONTRACTUAL INTENT

Despite the surviving factions of resistance, most academicians and law makers agree that contractual intent is based on the parties'

---

26. U.C.C. § 2-212 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

27. It should be noted that the comments for UETA do reference actions of the electronic agent even though the reference is conspicuously absent from the main text of the Act. See Uniform Electronic Transactions Act § 9 cmt. 1 (1999). The significance of the absence of specific reference from the actual code, but inclusion in the comments is left to the interpreting courts.

28. See Uniform Electronic Transactions Act § 10 (1999).

29. As of this date, 43 states have adopted some version of the UETA, and two states have legislation pending to adopt it. See Uniform Law Commissioners, *A Few Facts About the Uniform Electronics Transaction Act*, [http://www.nccusl.org/nccusl/uniformact\\_factsheets/uniformacts-fs-ueta.asp](http://www.nccusl.org/nccusl/uniformact_factsheets/uniformacts-fs-ueta.asp) (last visited Dec. 9, 2003).



objective manifestation of assent to certain and definite terms.<sup>30</sup> The U.C.C. defines a "party" as a person engaging in a transaction or making an agreement within the Act.<sup>31</sup> The U.C.C. further defines a "person" as an individual, organization or other legal entity.<sup>32</sup> Although the official comments make it clear that the term "party" also includes a person acting through an agent, it also provides for careful scrutiny of situations where an agent acts in opposition to his principal.<sup>33</sup> Thus, a principal may avoid a contract if he establishes that the purported agent lacked the authority<sup>34</sup> to enter into the contract.<sup>35</sup> Likewise, a party may avoid a contract if he can establish that his intent to contract was hampered by mistake, fraud, duress or undue influence.<sup>36</sup>

Enter the computer age with its tremendous advantage of instantaneous communication. Even as far back as the era of mainframe technology, businesspersons embraced the idea of conducting business via electronic transmissions. However, when the deals made by the technologically savvy pioneers went awry, attorneys and judges alike were faced with a statutory scheme, the U.C.C., which was ill-equipped to govern disputes arising out of contracting through electronic transmissions.<sup>37</sup> While the plain language of the then-existing Article 2 ostensibly precluded an electronic transmission from meeting the definition of a "writing,"<sup>38</sup> courts generally glossed over the Code's language in an apparent

30. *E.g.*, E. ALLAN FARNSWORTH, *CONTRACTS* § 3.6 (3d ed. 1999); Common law principles are specifically incorporated into Article 2 unless they have been displaced by other provisions. U.C.C. § 1-103 (2002).

31. U.C.C. § 1-201(26) (2002).

32. *Id.* § 1-201(27).

33. *Id.* § 1-201(26) cmt. 29.

34. For the purposes of this discussion, the distinction between actual and apparent authority is inconsequential. It is beyond the scope of this article to explore such distinctions.

35. *See, e.g.*, *E. Paul Kovacs & Co. v. Alpert*, 429 A.2d 829, 832 (Conn. 1980); 111 *Whitney Ave., Inc. v. Comm'r of Mental Retardation*, 802 A.2d 117, 124 (Conn. App. Ct. 2002); *RESTATEMENT (SECOND) OF AGENCY* § 140 (1958).

36. *See, e.g.*, *Odorizzi v. Bloomfield Sch. Dist.*, 246 Cal. App. 2d 123 (1966); *McDonald v. Mobil Coal Producing, Inc.*, 820 P.2d 986, 990 (Wyo. 1991); ; *see also* *RESTATEMENT (SECOND) OF CONTRACTS* § 19 cmt. c (1981).

37. The Electronic Messaging Services Task Force, *'The Commercial Use of Electronic Data Interchange—A Report and Model Trading Partner Agreement*, 45 *BUS. LAW.* 1645, 1649-50 (1990).

38. Writing refers to "printing, typewriting, or any other intentional reduction to tangible form." U.C.C. § 1-201(46) (1972).

attempt to deal with the increasing use of such electronic transmissions.<sup>39</sup>

Nevertheless, borrowing from the provisions of the UETA, Article 2 now authorizes the formation of contracts for the sale of goods by interaction with or between electronic agents without the knowledge or action of an individual.<sup>40</sup> This newly-added provision was specifically intended to prevent a party from claiming lack of contractual intent when electronic agents have interacted to form a contract without human intervention, thereby making it easier to form contracts electronically.<sup>41</sup>

With the addition of electronic contracting provisions, Article 2 has effectively retreated from the common law requirement of contractual intent. Because of these changes to Article 2, binding contracts of questionable nature can be established between parties because specific legal effect is given to completed transactions between two or more non-persons with the capacity to operate autonomously. Indeed, these dubious contracts may be formed without even requiring a showing that such parties had any opportunity for actual involvement in the transaction. Instead, contractual intent is inferred from the programming and use of the electronic devices.<sup>42</sup> However, as discussed in the following sections of this article, applying other relevant provisions of Article 2 to an electronic contracting situation will often render the parties' pre-programmed instructions inoperative.<sup>43</sup> Thus, it appears that true contractual intent has taken a backseat to the need for quick and economical commercial trading.

In order to truly appreciate the inherent difficulties with validating contracting between electronic agents, it is helpful to examine the basic principles of the Law of Agency. An agency is an agreement between two parties whereby one agrees to allow the other to act on his behalf and the other agrees to act in such a capacity.<sup>44</sup> The nature of the relationship is such that both parties, the principal and the agent, have manifested some assent to the creation of the

39. See Theuman, *supra* note 9.

40. U.C.C. § 2-204(4)(a) (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

41. *Id.* § 2-204 cmt. 4.

42. *Id.* § 2-204 cmt. 5.

43. For example, Section IV.B. of this article describes how pre-printed terms of the parties' autonomously-generated records may not be included in the resulting contract formed between the electronic agents.

44. RESTATEMENT (SECOND) OF AGENCY § 1 (1958).

relationship.<sup>45</sup> It stands to reason that both the principal and agent must have the capacity to agree to the agency relationship independent of the control of the other party. For obvious reasons, the basic tenet of agency law cannot apply to a situation where the principal is a person or other legal entity and the agent is a computer, a mere machine, which depends on being programmed by its purported principal in order to perform any function on behalf of the principal. Without the independent capacity of the purported agent to consent to the agency relationship, an agency relationship does not exist. Thus, the foundation of Article 2's recognition of electronic agents is faulty. It stands to reason that the fall-out from this faulty premise will be troublesome.

Even before the drafting of the UETA, legal scholars foresaw potential problems with contracting by computers.<sup>46</sup> Others specifically pointed out that Article 2 in its pre-revision state was insufficient to deal with electronic commerce.<sup>47</sup> On one occasion, it was suggested that a choice had to be made between upholding the long-standing doctrine of contractual intent and relaxing such requirements in favor of an implied or indirect intent theory whereby the mere use of a computer would attribute to the user intent to be bound by the acts resulting from such use.<sup>48</sup> The drafters of the 2003 revisions to Article 2 clearly chose the latter.<sup>49</sup>

While some scholars make the case the computers are no less capable of possessing intentionality than other nonhuman entities accorded legal person status, others contend computers lack intentionality because they do not have the ability to independently process meanings separate and apart from the instructions of the operating program.<sup>50</sup> If the naysayers are correct in their assertions, it follows that there is no contractual intent imputed to the parties by the electronic agents' acts.

As now penned, section 2-204 allows for the making of a contract for the sale of goods in any manner sufficient to show

45. "An agency relation exists only if there has been a manifestation by the principal to the agent that the agent may act on his account, and consent by the agent so to act." *Id.* § 15.

46. See, e.g., Allen & Widdison, *supra* note 16, *passim*.

47. The Electronic Messaging Services Task Force, 'supra note 37, at 1649-50.

48. Allen & Widdison, *supra* note 16, at 43-44.

49. See U.C.C. § 2-204 cmt. 4 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>; *id.* § 2-212.

50. E.g., Lawrence B. Solum, *Legal Personhood for Artificial Intelligence*, 70 N.C. L. REV. 1231, 1267 (1990) (discussing the lack of intentionality position in JOHN R. SEARLE, *MINDS, BRAINS & PROGRAMS*, 63-70 [1984]).

agreement, and the section includes the interaction of electronic agents as an example.<sup>51</sup> However, the term “agreement” as defined by the U.C.C. refers to the bargain of the parties in fact.<sup>52</sup> “. . . [T]he bargain principle itself, rests on the empirical premise that in making a bargain a contracting party will act with full cognition to rationally maximize his subjective expected utility.”<sup>53</sup> The capacity to contract is measured in terms of a party’s ability to purposefully participate in the bargaining process.<sup>54</sup> Remember, a party is a person,<sup>55</sup> and a person is an individual or other legal entity.<sup>56</sup> If one follows this interrelated string of legal principles to its logical conclusion, only an individual or other legal entity can be a party to a contract. In addition, that party must have the ability to rationally and cognitively participate in the contracting process for the protection of his interest. If physical or mental restraints prevent the actor from participating rationally or cognitively, the actor lacks capacity to contract.<sup>57</sup> However, if the contracting process itself does not afford a party opportunity for meaningful participation, there is no bargain, and thus, no agreement.<sup>58</sup>

Revised section 2-204 allows contracting between electronic agents without the opportunity for human review. Since machines programmed to function within the predetermined parameters of the programming parties cannot act rationally or cognitively, the bargain element of an agreement cannot be satisfied without building into the process the capacity for human review.

Even more troublesome is the predicted eventuality that technology will soon produce computers that can learn and produce autonomous transmissions through artificial intelligence. While artificial intelligence is spoken of in many contexts, the term is

---

51. U.C.C. § 2-204(1) (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

52. U.C.C. § 1-201(b)(3) (2002).

53. Melvin Aaron Eisenberg, *The Limits of Cognition and the Limits of Contract*, 47 STAN. L. REV. 211, 212 (1995).

54. FARNSWORTH, *supra* note 30, § 4.2.

55. U.C.C. § 1-201(26) (2002).

56. *Id.* § 1-201(27).

57. Even though an agent lacks capacity to bind himself to an agreement, he may bind a principal who allows the agent to act on his behalf. However, the agent’s ability to bind his principal is limited by his mental or physical ability to act on behalf of the principal. RESTATEMENT (SECOND) OF AGENCY § 21 cmt. a (1958).

58. This does not suggest that parties are required to actively negotiate or participate in order to create a valid agreement. It merely suggests that the parties must have the opportunity to do so.

generally used to refer to computer programs which generate rules of production based on principles derived from a given set of experiences.<sup>59</sup> This contrasts with other types of computer programs that operate based on a definitive set of pre-programmed instructions.<sup>60</sup> Thus, a computer using artificial intelligence technology is said to be trainable and to learn from experiences.<sup>61</sup> In this scenario, a computer will simulate the human thought process through the ability to autonomously modify its instructions and produce transmissions not contemplated by the human-party interest.<sup>62</sup> This would be a situation where the electronic agent clearly does not manifest the intention of the principal since there are no pre-programmed parameters guiding the computer's actions. However, under revised Article 2, the act of the electronic agent would still be attributed to the principal.<sup>63</sup>

In fact, the possibility of artificial intelligence being introduced to the electronic contracting process is addressed in the official comments of the UETA, along with an acknowledgement that appropriate adjustments may be required if and when this eventuality occurs.<sup>64</sup> Unfortunately, the drafters of the 2003 revisions to Article 2 failed to take this to heart when they opened the door for contracting between electronic agents.

Tragically, this could be yet another situation in which key provisions of Article 2 are rendered outdated and useless before the ink dries on the 2003 revisions.<sup>65</sup>

---

59. See Eric Engle, *Smoke and Mirrors or Science? Teaching Law with Computers—A Reply to Cass Sunstein on Artificial Intelligence and Legal Science*, 9 RICH. J.L. & TECH. 2 (Winter 2002-2003), at <http://law.richmond.edu/jolt/v9i2/Article6.html>.

60. *Id.*

61. *Id.*

62. See, e.g., Allen & Widdison, *supra* note 16, at 27.

63. U.C.C. § 2-212 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

64. Uniform Electronic Transactions Act § 2 cmt. 5 (1999).

65. In this scenario, the parties would be left with the provisions of any applicable avoidance doctrines, some of which are discussed in Section VII, in order to seek relief from such acts. It remains to be seen how one goes about arguing that his electronic agent exceeded its authority to bind him. Equally as interesting is the potential for false claims of artificial intelligence-spurred transmissions utilized by parties seeking to get out of a bad deal.

## V. ELECTRONIC AGENTS AND THE PAROL EVIDENCE RULE

A. *The Framework of the Parol Evidence Rule.*

Article 2's parol evidence rule is found in section 2-202.<sup>66</sup> This section provides that certain matters extraneous to the record may not contradict an agreement set forth in a record if the parties intended the record to be an integrated agreement, *i.e.*, to represent the final expression of the parties' agreement regarding the terms in such record.<sup>67</sup> Whether extrinsic materials may be received at all depends on whether the agreement was integrated, and if so, the degree of such integration.<sup>68</sup> In attempting to determine whether and to what degree the agreement was integrated, the courts are solely concerned with the parties' intent.<sup>69</sup> Most courts uniformly dismiss the notion that a record containing a merger or integration clause<sup>70</sup> is dispositive of the parties' intent to create an integrated agreement.<sup>71</sup> Similarly, the drafters of the 2003 official revisions to Article 2 specifically considered and rejected the premise that the presence of an integration clause is conclusive or presumed to be conclusive evidence of the parties' intent on this issue.<sup>72</sup> To ascertain the parties' intent, the court will examine factors such as the presence or absence of an integration clause, whether the parties included any disclaimer language, the relative sophistication of the parties, and the scope of prior negotiations, if any.<sup>73</sup> However, as applied to a contract created between two electronic agents, the parol evidence rule appears to be an exercise in futility.

---

66. Although there were a few minor revisions to this code section in the 2003 official version, the substance of this code section did not change. U.C.C. § 2-202 (Draft of Article 2 Amendments Approved at ALI Annual Meeting May 13, 2003), at <http://www.ali.org/>.

67. *Id.*

68. See U.C.C. § 2-202 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>; see, e.g., *Betaco, Inc. v. Cessna Aircraft Co.*, 32 F.3d 1126, 1132 (7th Cir. 1994); FARNSWORTH, *supra* note 30, § 7.3, at 431.

69. *Id.*

70. A merger or integration clause states the parties agree that the record contains the final agreement of the parties on the issues included in the record. See FARNSWORTH, *supra* note 30, § 7.3, at 436.

71. See, e.g., *Betaco*, 32 F.3d at 1132; FARNSWORTH, *supra* note 30, § 7.3, at 436.

72. See, U.C.C. § 2-202(b) cmt. 2 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

73. See, e.g., *Betaco*, 32 F.3d at 1132-33.

*B. The Parol Evidence Rule Meets the Electronic Agents*

As mentioned above, section 2-204 now allows formation of a valid contract between electronic agents without the knowledge of or need for review by an individual. Suppose a buyer's computer program is set up to automatically transmit a record of an offer to buy goods that contains an integration clause. Also, suppose a seller's computer system is programmed to automatically generate and electronically transmit acknowledgements and acceptances of electronic orders received. However, the seller's acceptance transmission contains a disclaimer-of-warranty provision, as well as an integration clause. Upon transmission of the seller's acceptance record to the buyer, a valid contract would be formed under revised 2-204.<sup>74</sup> Moreover, under revised section 2-207, the integration clause would become a part of the agreement because it appears in both records.<sup>75</sup> However, the disclaimer of warranty provision would not become a part of the contract because there is no matching provision in the buyer's record.<sup>76</sup> Instead, the warranty provisions of Article 2 would apply pursuant to 2-207(c).<sup>77</sup>

After performance is complete and the goods prove defective, the seller may rely on the provisions of its electronically transmitted acceptance purporting to disclaim all warranties. If the buyer makes an objection based on the parol evidence rule, the court is called upon to determine if the disclaimer of warranty provision is admissible to vary the matching terms of the records. If the agreement is found to be integrated, evidence of the disclaimer clause would be inadmissible because it contradicts the terms of the agreement created by the parties' electronic agents, which included the standard warranty provisions of Article 2.

In spite of the prescribed outcome under the revised Article 2, one must question whether the parties really intended the agreement, created by an exchange of automatically generated and electronically transmitted records, to represent their final agreement of the terms contained in the record. The seller appears to have a compelling argument that inclusion of a disclaimer of warranty in his record of

---

74. U.C.C. § 2-204 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org>.

75. *Id.* § 2-207.

76. *Id.*

77. *Id.* This code section states a contract formed by offer and acceptance includes terms appearing in both records, to which both parties agree, and those supplied by the U.C.C.

acceptance is *prima facie* evidence of a lack of intent that any resulting agreement without such a disclaimer provision be the final expression of the terms of such agreement.

Even in the absence of conflicting terms in the electronically transmitted records, the parties would have an equally compelling argument that records generated and transmitted electronically by computers programmed to automatically respond to each other cannot carry the requisite showing of intent to form an integrated agreement, especially since the parties have not engaged in any negotiations. In fact, courts have struggled with the issue of intent to create an integrated agreement even in situations where the parties themselves negotiate the terms of the agreement and include specific language indicating that the agreement represents their full and final understandings.<sup>78</sup> For the very reason that courts continue to examine extrinsic evidence in order to ascertain the parties' intent to create an integrated agreement in such situations, the courts may similarly be compelled to conclude that agreements made by electronic agents without review or approval by individuals can never demonstrate an intent that such agreement be a final expression of the terms of the agreement.

Logic dictates that when the ability of a human actor to review and approve is removed from the contract formation process, any significance given to the perfunctory conduct of the electronic agent during contract formation is *sua sponte* nonprobative on the issue of the parties' intent that the resulting terms, whatever they may be, constitute their final agreement on such matters. A court would be hard-pressed to impose upon any party a finding of intent to be bound by the terms of an agreement he did not have the opportunity to learn about or approve beforehand, especially when such a finding prevents the party from introducing extrinsic evidence which would establish the circumstances surrounding the making of the agreement. With this being the case, a party seeking to invoke the protection of the parol evidence rule would not be able to establish the requisite foundational showing of mutual intent that the record be a final expression of the parties' agreement, and thus, the parol evidence rule falls on its own sword when confronted with contracting by electronic agents.

Under the previous version of Article 2, while the trading of written offers and acceptances could have resulted in the formation of

---

78. *E.g.*, *Betaco*, 32 F.3d at 1132; *Sierra Diesel Injection Serv., Inc. v. Burroughs Corp.*, 890 F.2d 108, 112 (9th Cir. 1989); *see also*, FARNSWORTH, *supra* note 30, § 7.3, at 436.



a contract without terms a party included in his form, the parties had the opportunity to prevent such a result. Under previous section 2-207, a party could limit acceptance of his offer to only those terms contained therein.<sup>79</sup> Also, the recipient party could stipulate that his acceptance was only effective if the offering party agreed to the new or different terms contained in his accepting form.<sup>80</sup> Lastly, the offeror could timely object to any new or different terms contained in the purported acceptance.<sup>81</sup> When properly invoked, each of these safeguards assured a party would not find himself bound to a deal governed by undesired terms. However, revised Article 2 does not have such a safety valve. Under revised section 2-207, a party desiring to contract based on the terms of his record may find himself bound by a contract without such terms if the other party's record does not match his terms.<sup>82</sup> Also, with the ability to contract through the interaction of electronic agents, there is no provision to review or object to non-matching forms in the course of contract formation.

## VI. ELECTRONIC AGENTS AND OUTPUT/REQUIREMENTS CONTRACTS<sup>83</sup>

It is often said that only a specified quantity is needed in order to save a contract for the sale of goods from failing for indefiniteness.<sup>84</sup> Nevertheless, Article 2 recognizes the validity of contracts for the sale of goods stated in terms of all the buyer requires or that seller can supply even though no specific quantity is mentioned.<sup>85</sup> The quantity term is supplied by the seller's output or the buyer's requirements, as the case may be.<sup>86</sup> These provisions have also survived the 2003 revisions.

The essence of the output and requirements contracts provision under Article 2 is flexibility in contracting for the sale of goods without being subject to the rigors of the common law concept of

---

79. U.C.C. § 2-207(2)(a) (1996).

80. *Id.* § 2-207(1).

81. *Id.* § 2-207(2)(c).

82. U.C.C. § 2-207 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

83. The likelihood of two electronic agents interacting to contract on a requirements or output basis may seem remote. However, Article 2 unquestionably enables such a transaction. Thus, the idiosyncrasy of this scenario is ripe for exploration.

84. See, e.g., *Indiana – Am. Water Co., Inc. v. Town of Seelyville*, 698 N.E.2d 1255, 1259–60 (Ind. Ct. App. 1998); *Iwtmm, Inc. v. Forest Hills Rest Home*, 577 S.E.2d 175, 178 (N.C. Ct. App. 2003).

85. U.C.C. § 2-306 (1998).

86. See, e.g., *Meyer v. Sandhills Beef, Inc.*, 318 N.W.2d 863, 866 (Neb. 1982).

indefiniteness.<sup>87</sup> Checked by the requirement of good faith, this provision allows parties to shore up commitments for the procurement and supply of goods without specifically stating a quantity.<sup>88</sup> Nevertheless, the foundation of this provision is the fact that the buyer's needs are reasonably predictable and thus within the range of business risk a seller is willing to take.<sup>89</sup> "[E]ven where one party acts with complete good faith, the section limits the other party's risk in accordance with the reasonable expectations of the parties."<sup>90</sup> Thus, the output and requirement provisions appear to contemplate some level of human evaluation of the other parties' business practices in order to ascertain whether an output or requirements relationship with that particular party is a risk worth taking. The assumption of human evaluation may also be found in the language of section 2-306, which prohibits a party from demanding or tendering quantities unreasonably disproportionate to the estimate stated in the agreement or if none, a normal or comparable prior output or requirement.<sup>91</sup> In determining the prior normal or otherwise comparable output or requirement, section 2-306 is silent on whether the inquiry was intended to focus on the prior or comparable conduct of the parties alone or to include relevant industry standards. However, this provision has routinely been construed as referring only to prior dealings between the parties.<sup>92</sup> Thus, the code section reflects a situation where the reasonable expectations of the parties have been established through negotiations producing an estimate of the output or requirements or by prior dealings between the parties.

In addition, an output or requirements relationship has been regarded as a promise of exclusivity, meaning the party receiving the benefit of flexibility promises to deal with the other party exclusively.<sup>93</sup> Thus, simply programming a computer to respond to a pre-described set of parameters would not seem to allow for

---

87. Under common law, the failure to include all essential terms renders a contract unenforceable. *See, e.g., Witt v. Realist, Inc.*, 118 N.W.2d 85, 93-94 (Wis. 1962).

88. U.C.C. § 2-306 cmt. 2 (1998).

89. *Id.*; *see also* JOSEPH M. PERILLO & HELEN HADJIYANNAKIS BENDER, 2 CORBIN ON CONTRACTS § 6.5 (rev. ed. 1995).

90. *Orange & Rockland Utilities, Inc. v. Ameranda Hess Corp.*, 397 N.Y.S.2d 814, 819 (N.Y. App. Div. 1977).

91. U.C.C. § 2-306 (1996).

92. *See, e.g., Duval & Co. v. Malcolm*, 214 S.E.2d 356, 357 (Ga. 1975); Stacy A. Silkworth, *Quantity Variations in Open Quantity Contracts*, 51 U. PITT. L. REV. 235, 242 (1990).

93. *E.g., Silkworth, supra* note 92, at 247 (citing J. CALAMARI & J. PERILLO, *THE LAW OF CONTRACTS* § 4-13, at 240 [3d ed. 1987]).

consideration of whether the parties have had prior dealings, the normal output or requirements established by such previous dealings, and whether the party with whom the computer interacts is seeking or is willing to enter into an exclusive relationship.

Since the hallmark of output and requirements contracts is the reasonable expectation of the parties at the time of contracting, it seems illogical to conclude that output and requirements provisions were intended to be extended to contract formation through the interaction of electronic agents without having some ability to evaluate on a case-by-case basis those elements which define the parties' reasonable expectations.

## VII. ELECTRONIC AGENTS AND WAIVERS/MODIFICATIONS

Legal scholars have explored the pitfalls of section 2-209's modification and waiver provisions on more than one occasion, offering a variety of suggestions for simplifying the provisions.<sup>94</sup> In fact, several preliminary drafts of the proposed amendments to this code section demonstrate that a lot of discussion took place regarding the need for such a revision.<sup>95</sup> Nevertheless, section 2-209 survived the 2003 revisions essentially intact.<sup>96</sup> Accordingly, Article 2 still allows for waiver of contractual provisions by conduct which is deemed to forego enforcement of rights created by such provisions.<sup>97</sup> For example, even though section 2-209(2) states that an agreement may require modifications to be in writing in order to be valid, section 2-209(4) allows a court to find a waiver of the written modifications only provision by conduct deemed to forego enforcement of the provision.<sup>98</sup> Thus, a party's assent to or failure to object to a proffered oral modification effectively waives a provision prohibiting

---

94. See, e.g., JAMES J. WHITE & ROBERT S. SUMMERS, *UNIFORM COMMERCIAL CODE* § 1-6, 52-53 (5th ed. 2000); see also, e.g., Douglas K. Newell, *Cleaning Up U.C.C. Section 2-209*, 27 IDAHO L. REV. 487, 491-500, 503-04 (1990-1991) (suggesting retaining only the first subsection dealing with modifications and deleting the rest of the section or adding a clear and convincing burden of proof requirement to the first subsection for claims of oral modifications and deleting the balance of the section).

95. See A.L.I., U.C.C. § 2-210, notes (Discussion Draft Apr. 14, 1997).

96. The only revisions to this section reflect the recognition of an electronic record in lieu of the previous requirement of a writing. See U.C.C. § 2-209 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

97. See *id.* § 2-209(4).

98. Cf. *Moe v. John Deere Co.*, 516 N.W.2d 332, 336 (S.D. 1994) (finding a contractual right to declare a default upon late payment can be waived by conduct despite an express non-waiver clause).

oral modifications.<sup>99</sup> The same waiver provision extends to attempted modifications of agreements required by the Statute of Frauds to be in writing or some other indicia of a signed record.<sup>100</sup> Similarly, Article 2 continues to allow modifications of agreements for the sale of goods without consideration.<sup>101</sup>

Previously, the poorly drafted modification and waiver provisions of section 2-209 posed little threat to the actual intent of the parties since mutual assent was required in order to trigger such provisions.<sup>102</sup> Moreover, notions of “knowing and voluntary” still hovered close when determinations of waiver validity were at issue.<sup>103</sup> The effect was to regard the parties’ agreement as their actual bargain, including any subsequent conduct assented to or relied upon, without having the parties hamstrung by technical rules of enforcement.

Now, with the addition of the electronic contracting provisions, Article 2 would apply the same modification and waiver provisions to transactions consummated by electronic agents without review or action by an individual. Thus, the parties’ actual intent may be threatened or displaced by the effect of the actions performed by electronic agents. A glitch in a buyer’s computer programming can result in subsequent and/or duplicative electronic orders being sent to and processed by seller’s electronic agent.<sup>104</sup> Likewise, it is just as probable for automated electronic transmissions between electronic agents to inadvertently modify negotiated agreements between the actual individuals, either by transmission errors or by inclusion of boilerplate terms not previously included within the original negotiated agreement. Since consideration is not required for a valid modification, and the intent to modify will be gleaned from the parties’ programming of the electronic devices used, the modification may very well be valid and enforceable.<sup>105</sup>

To illustrate this point, let us assume Buyer and Seller telephonically reach an oral agreement for the purchase of certain

99. See U.C.C. § 2-209(4) (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

100. *Id.*

101. *Id.* § 2-209(1).

102. *E.g.*, *Cambridge Tech., Inc. v. Argyle Indus., Inc.*, 807 A.2d 125, 135 (Md. Ct. Spec. App. 2002).

103. *E.g.*, *id.* at 134.

104. See Amelia H. Boss, *The Uniform Electronic Transactions Act In a Global Environment*, 37 IDAHO L. REV. 275, 344 (2001).

105. Whether the parties will be able to avail themselves of certain avoidance doctrines in the face of the new electronic provisions is discussed in Section VI.

materials from Seller for delivery no earlier than three weeks due to the fact that Buyer's business facilities will not be complete until such time. Subsequently, Seller's electronic agent initiates an electronic transmission confirming the purchase order but containing boilerplate terms which provide for a two-week delivery date and prohibit modifications without a signed record. In response, Buyer's electronic agent generates an acknowledgment agreeing to the terms of Seller's electronically generated confirmation. Under sections 2-204 and 2-209, this would appear to be a valid and enforceable modification of the parties' oral agreement, despite the fact that the parties did not intend to effect such a modification.

After the electronic agents trade transmissions, Buyer reviews the resulting records and notices the discrepancy in the delivery date. Buyer then immediately telephones Seller to make sure the three-week delivery date will be honored. Seller orally assures Buyer that delivery in three weeks will be no problem. Nevertheless, due to Seller's oversight, Seller's delivery truck arrives with the goods after only two weeks and demands that Buyer take delivery. Naturally, Buyer refuses, and Seller subsequently sues Buyer for damages.

The second telephone conversation would appear to be yet another modification of the unintended result of interaction between the electronic agents in order to conform to the parties' original understanding. However, section 2-209(2) appears to prevent Buyer from referring to the second telephone conversation because it would attempt to modify a contract containing a written modifications only provision. Here, the fact that the first modification was effected without the need or requirement of review or action by an individual resulted in a situation where the intended bargain is rendered irrelevant.

Now, let us suppose that artificial intelligence technology produces the autonomous learning computer previously described in Section III. The possibility of having an existing agreement modified by an unsolicited electronic transmission and automatically confirmed by the electronic agent on the other end without the knowledge of the principal parties is even greater. This demonstrates the need for some type of individual involvement in order to avoid unintentional modifications of contracts.

A possible resolution to the seemingly wide-open allowance of modifications to unintentionally thwart a contractual relationship would be to require the two-step showing set forth in the case of *Roth*

*Steel Products v. Sharon Steel Corp.*<sup>106</sup> that the modification was spurred by circumstances that would lead a similarly situated merchant to seek a similar modification and that there is a legitimate commercial reason for the modification.<sup>107</sup> With this requirement, any unintentional modification would have to be justified in light of circumstances likely to come to the attention of the parties. This comports with the long-standing requirement of mutual assent to modifications.

#### VIII. ELECTRONIC AGENTS AND AVOIDANCE DOCTRINES

Lastly, we explore the availability of certain avoidance doctrines to undo any unintentional contractual relationship resulting from the interaction of electronic agents. Since contracting by electronic agents effectively dispenses with the bargaining process, it is probably safe to assume that claims of undue influence and duress<sup>108</sup> will not surface in connection with contracts made between electronic agents. Likewise, although a claim of lack of capacity to contract may very well be ripe when computers are the sole actors in the contracting process, the proof stage of this defense would probably overwhelm most attorneys. Thus, lack of capacity claims probably will not be asserted.

The official comments to the revised Article 2 provisions allowing formation of a contract by interaction of electronic agents specifically preserve the defenses of fraud and mistake.<sup>109</sup> However, when confronted with contracts formed in this manner, the comments caution courts not to approach such defenses with the same legal standards applicable to nonelectronic transactions.<sup>110</sup> Two issues need to be resolved. First, do the general doctrines of fraud and mistake as we know them lend any assistance in undoing what the parties did not do or want to be done in the first place? Second, if courts are not to apply the generally accepted legal standards in evaluating claims of fraud and mistake in electronically formed contracts, what standards should be applied?

---

106. 705 F.2d 134 (6th Cir. 1983).

107. *Id.* at 145–46.

108. Both of these doctrines involve some type of overreaching during the bargaining process. See, e.g., *Odorizzi v. Bloomfield Sch. Dist.*, 246 Cal. App. 2d 123, 128, 130–31 (1966).

109. U.C.C. § 2-204 cmt. 6 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

110. *Id.*

While examining the common law defenses of fraud and mistake, it is important to note that such doctrines arose in an era when contract law required at least two separate persons with the capacity for free will to agree based on the circumstances surrounding the bargaining process.

#### *A. Fraud*

The premise upon which relief has been accorded for fraud is that a party has been deceived during the bargaining process that led to the contract formation.<sup>111</sup> In order to establish a claim of fraud, one must demonstrate that an intentional or material misrepresentation induced him to assent, and that such assent was in reasonable reliance on the misrepresentation.<sup>112</sup> Fraud implies knowledge of the misrepresentation or reckless disregard of the truth of the assertion.<sup>113</sup> It is not enough that the assertion is false, but the asserting party must also intend to mislead.<sup>114</sup>

In the context of pre-programmed computers operating within prescribed parameters, are we to be concerned about the deceitful conduct of the programming principals or the electronic agent? If the programming party utilizes deceitful tactics in the programming process with knowledge that a responding electronic agent would transmit a manifestation of assent in response, this is probably a classic case of fraud.<sup>115</sup> However, where the programming party engages in no improper conduct in programming the electronic agent, must we then focus on the actions of the electronic agent? The UETA's inclusion of provisions governing the effect of change or error occurring in the transmission recognizes the likelihood of such occurrences.<sup>116</sup> This could result in the transmission of a misrepresentation. Moreover, where the change or error remains within the predetermined acceptable range of the responding electronic agent, an automatic electronic response of acceptance will be generated which ostensibly forms an agreement.

111. FARNSWORTH, *supra* note 30, § 4.9.

112. RESTATEMENT (SECOND) OF CONTRACTS § 164(1) (1981).

113. *Id.* § 162(1).

114. *Id.* § 164 cmt. a; *see also* *Odorizzi v. Bloomfield Sch. Dist.*, 246 Cal. App. 2d 123, 129 (1966).

115. The classic case of fraud occurs where a party makes a misrepresentation with knowledge of the falsity of the representation with the intent to induce assent by the other party and the other party justifiably relies on the misrepresentation in giving his assent. *See* RESTATEMENT (SECOND) OF CONTRACTS §§ 162, 164 (1981).

116. Uniform Electronic Transactions Act §10 (1999).

Once the parties discover the effects of the transmissions between the electronic agents, will either be able to establish fraud in order to avoid the contract? Although the transmission error resulted in a misrepresentation, it is unlikely that a showing of knowledge of the misrepresentation or intent to defraud can be established where there is nothing to indicate that the misrepresentation was known to the sending party at the time of transmission. Certainly, intent and knowledge are not actions which one can attribute to the computer. Likewise, the party's lack of intent to deceive makes it unjust to attribute such intent or knowledge to him.<sup>117</sup>

Next, the element of reasonable reliance must be analyzed. Where the parties leave the task of achieving mutual assent to their electronic agents with no provisions for human intervention, is it reasonable to rely on the unread transmissions from an electronic agent to bind one to a commercial transaction? Unless it can be shown that reliance was reasonable, a party cannot be accorded relief in fraud.<sup>118</sup> Thus, the question becomes whether a party can justifiably rely on a transmission from an electronic agent which is inherently susceptible to transmission errors. If a reasonable person should be aware of the possibility of such transmission changes or errors, then it cannot be said that it is reasonable to rely on the process of electronic contracting without instituting some type of human review procedure to guard against unintentional consequences.

Accordingly, in the absence of deceptive conduct by the parties in the programming stage, the doctrine of fraud does not appear to provide relief from an agreement formed through the interaction of electronic agents.

### *B. Mistake*

"A mistake is a belief that is not in accord with the facts."<sup>119</sup> Where there is a material misconception about a basic assumption upon which the contract was based, a party may be allowed to avoid the contract.<sup>120</sup> The relevant time for the inquiry of what the parties believed is at the time of contracting.<sup>121</sup> Accordingly, the foundation

---

117. It should be noted that a material misrepresentation, albeit not fraudulent, may be sufficient to bypass this element. However, the reliance issues would nevertheless apply. See RESTATEMENT (SECOND) OF CONTRACTS §§ 163, 164 (1981).

118. See, e.g., *Norton v. Poplos*, 443 A.2d 1, 6 (Del. 1982); RESTATEMENT (SECOND) OF CONTRACTS § 164 (1981).

119. RESTATEMENT (SECOND) OF CONTRACTS § 151 (1981).

120. *Id.* § 152(1).

121. *Id.*



of this doctrine appears to be an inquiry into the state of mind of the parties at the time of contracting.

Where parties are engaged in contracting by the interaction of electronic agents, the time of contracting appears to be the time when the responding electronic agent performs the accepting electronic transmission, as attributed to the parties.<sup>122</sup> In most cases, only the electronic agents operating independently of any involvement by an individual would contain information regarding the actual details of the transaction at the time it is being performed. This is especially true since section 2-204 allows formation of a contract when no individual is aware of the electronic agents' actions.<sup>123</sup> Thus, can it be said that the electronic agents have "beliefs?"<sup>124</sup> It is doubtful that even the true supporters of artificial intelligence would characterize the autonomous learning and operating capabilities of the smart computers as a "belief." Moreover, whether the principal parties should be deemed to have any belief as to the existence of facts at a time when they do not necessarily know that a contract is being formed is a question the courts will have to address in the course of examining the applicability of this doctrine to contracting between electronic agents.

But, there is a more basic concern regarding the applicability of the mistake doctrine to contracting between electronic agents. In contract law, there are two categories of mistake: mutual<sup>125</sup> and unilateral.<sup>126</sup> In order to be accorded relief from a contract under either category or mistake, the requesting party must demonstrate, among other things, he did not bear the risk of the mistake.<sup>127</sup> A party will bear the risk of mistake when the party is aware that he has limited knowledge of the relevant facts but proceeds anyway or when the risk is allocated to him by the agreement or the court where the surrounding circumstances indicate it is reasonable to do so.<sup>128</sup>

122. See U.C.C. §§ 2-204(4)(b), 2-212, 2-213 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

123. U.C.C. § 2-204(4)(a) (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

124. A belief is commonly defined as acceptance by the mind that something is true or real. *E.g.*, MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 104 (10th ed. 1999).

125. Both parties share the same misconception about a basic fact or assumption upon which their bargain is based. RESTATEMENT (SECOND) OF CONTRACTS § 152 (1981).

126. Only one party has a misconception about a basic fact or assumption upon which the bargain is based. *Id.* § 153.

127. *Id.* §§ 152, 153.

128. *Id.* § 154 (1981).

Let us return to the UETA provisions acknowledging the possibility of changes and errors occurring during electronic transmissions.<sup>129</sup> For the purposes of this discussion, we will assume such changes and errors rise to the level of a mutual mistake, i.e. a shared misconception about the state of the facts. Obviously, any party who chooses to engage in contracting through the interaction of electronic agents is proceeding with knowledge that in all likelihood he will not know that a contract is being formed, not to mention the actual terms of the contract. It can further be said that use of electronic agents in light of the possibility of transmission changes and errors without building into the process a mechanism for review and approval by an individual is tantamount to conscious ignorance. Overlooking the possibility of conscious ignorance, is this nevertheless a situation where the courts will allocate the risk of mistake to the party requesting relief? After all, the 2003 revisions specifically provide that unknown actions of electronic agents will be attributed to the parties.<sup>130</sup> Proceeding in the face of such a provision may be viewed by a court as a circumstance in which it is reasonable to allocate the risk of mistake to one or more of the parties.

Such a construction by the court would be consistent with long-standing treatment of cases involving transmission errors. For instance, in *Ayer v. Western Union Tel. Co.*,<sup>131</sup> an offer sent by telegram omitted a part of the price term, resulting in the offeree manifesting acceptance based on a price far below that intended by the offeror. The court determined that the transmission error was caused by the telegraph company and not any fault of either party.<sup>132</sup> However, the court determined that the person selecting the telegraph as a means of communication should bear the loss of the transmission error. In this regard, the court noted, "[t]he use of the telegraph has become so general, and so many transactions are based on the words of the telegram received, that any other rule would now be impracticable."<sup>133</sup>

Accordingly, the doctrine of mistake as we know it does not appear to relieve a party of a contract formed by the interaction of electronic agents, despite the presence of transmission errors.

---

129. Uniform Electronic Transactions Act §10 (1999).

130. U.C.C. §§ 2-204(4)(a), 2-212 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

131. 10 A. 495 (Me. 1887).

132. *Id.* at 496.

133. *Id.* at 497.

*C. Guidelines for Tailoring Avoidance Doctrines to Electronic Transactions.*

There is a real possibility that the severe issues created by the new electronic contracting provisions will be beyond repair through the general application of key avoidance doctrines. Nevertheless, the official comments to such provisions suggest that courts should consider the differences between electronic contracting and nonelectronic contracting when fashioning appropriate standards for applying certain avoidance doctrines.<sup>134</sup> Unfortunately, the comments do not give the courts any guidance in determining how to go about tailoring the doctrines to fit electronic contracting situations. Thus, the courts will be left to their own devices to determine how to deal with unintended outcomes of contracts created by actions of electronic agents. In the end, the absurdities and inconsistencies flowing from unbridled approaches by the courts will serve no other purpose than to answer in the negative a question posed close to a decade before the 2003 revisions were approved, to wit, whether the current state of contract law is equipped to deal with technology of contracting without involvement by individuals.<sup>135</sup>

## IX. CONCLUSION

I offer a few suggestions in order to facilitate the recognition of electronic contracting against the backdrop of current contract law. The main source of the potential conflict created by electronic contracting is the newly added provision in section 2-204 allowing the formation of contracts by the interaction of electronic agents without the knowledge of any individual.<sup>136</sup> As discussed above, the absence of some mechanism whereby an individual using due diligence could learn of and review the actions of the electronic agents beforehand poses several problems with the underlying notion of contractual intent. Accordingly, the easiest way to resolve this conflict is to amend Article 2 by deleting this provision but leaving intact the provision allowing contracting by the interaction of an electronic

---

134. U.C.C. § 2-204 cmt. 6 (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

135. Allen & Widdison, *supra* note 16, at 27.

136. U.C.C. § 2-204(4)(a) (Draft of Article 2 Amendments Approved at A.L.I. Annual Meeting May 13, 2003), at <http://www.ali.org/>.

agent and an individual.<sup>137</sup> This would ensure involvement by an individual on at least one side of the bargain.

Moreover, an even cleaner method would be to require, or at least enable, interaction or review of the electronic contracting process on the accepting end. This would serve two purposes: first, the programming party for the initiating electronic agent would still have the advantage of enjoying the capability of automatic ordering; second, the accepting party has an opportunity to review the terms proposed by the automatic transmission of the offeror's electronic agent. If the terms are agreeable, there is a meeting of the minds. If the terms are not agreeable, the individual acting on behalf of the offeree may decline. This comports with the long-standing requirements of mutual assent and contractual intent. Moreover, when the much anticipated artificial intelligence propelled computer is developed, the mechanism to deal with it will already be in place.

Finally, the most expedient manner of dealing with the chaos created by the clash between electronic commerce and the current state of contract law is to provide a mechanism whereby the parties first establish the terms by which they agree to conduct electronic transactions. A study conducted by the Electronic Messaging Services Taskforce of the American Bar Association concluded that the pre-revision version of the U.C.C. was inadequate to safeguard parties' expectations in an electronic transaction for the sale of goods, and thus suggested the use of a master agreement between the parties until such time as the U.C.C. is appropriately amended to deal with electronic commerce.<sup>138</sup>

The model agreement proposed by the taskforce is premised on the fact that the parties should mutually agree on the use of electronic transmissions to communicate, as well as the terms and conditions which will govern their electronic sales transactions.<sup>139</sup> This serves the dual purpose of ensuring that parties mutually agree beforehand to engage in electronic commerce, as also contemplated by the UETA, as well as ensuring that the parties do not find themselves bound to a transaction which does not include the terms and conditions each party's automated electronic transmission would otherwise propose. Moreover, the model agreement allows the parties to build into the contracting process human review and approval at specified stages or simply for unusual requests, as well as to specify what acts will

---

137. *See id.* § 2-204(4)(b).

138. The Electronic Messaging Services Task Force, *'supra* note 37, at 1649–50, 1665.

139. *Id.* at 1699.

constitute acceptance.<sup>140</sup> This provides the ability to ensure mutual and certain agreement on the terms of the electronic transaction.<sup>141</sup>

The model agreement proposed by the task force was intended as a stopgap to enable electronic commerce while Article 2 was undergoing revisions.<sup>142</sup> However, in light of the fact that the 2003 revisions did not remedy the concerns about assuring legal enforcement of electronic contracts, it is appropriate to continue to provide a mechanism for certainty and enforceability in electronic commerce until such time as the U.C.C. is sufficiently revamped.

---

140. *Id.*

141. *Id.* at 1735, Model Agreement § 2.3 cmt. 1.

142. The Electronic Messaging Services Task Force, *supra* note 37.